



[6450-01-P]

DEPARTMENT OF ENERGY

Office of Energy Efficiency and Renewable Energy

[Case No. CR-005]

Notice of Petition for Waiver of Felix Storch, Inc. (FSI) from the Department of Energy Commercial Refrigerator, Freezer and Refrigerator-Freezer Test Procedure, and Grant of Interim Waiver

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Notice of petition for waiver, notice of grant of interim waiver, and request for comments.

SUMMARY: This notice announces receipt of and publishes a petition for waiver and application for interim waiver from Felix Storch, Inc. (FSI) (hereafter, “petition”) from the U.S. Department of Energy (DOE) test procedure for determining the energy consumption of commercial refrigerators, freezers and refrigerator-freezers. Today’s notice also grants an interim waiver for specific basic models to FSI from portions of the DOE commercial refrigerator, freezer and refrigerator-freezer test procedure. Through this notice, DOE also solicits comments with respect to the FSI petition.

DATES: DOE will accept comments, data, and information with respect to the FSI petition until [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may submit comments, identified by case number CR-005, by any of the following methods:

- Federal eRulemaking Portal: www.regulations.gov. Follow the instructions for submitting comments.
- E-mail: AS_Waiver_Requests@ee.doe.gov. Include “Case No. CR-005” in the subject line of the message.
- Mail: Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, Mailstop EE-2J/1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: (202) 586-2945. Please submit one signed original paper copy.
- Hand Delivery/Courier: Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, 950 L’Enfant Plaza SW., Suite 600, Washington, DC 20024. Please submit one signed original paper copy.

Docket: For access to the docket to review the background documents relevant to this matter, you may visit the U.S. Department of Energy, 950 L’Enfant Plaza SW., Washington, DC, 20024; (202) 586-2945, between 9:00 a.m. and 4:00 p.m., Monday through Friday, except on Federal holidays. Available documents include the following items: (1) this notice; (2) public comments received; (3) the petition for waiver and application for interim waiver; and (4) DOE

rulemakings and waivers regarding commercial refrigeration equipment. Please call Ms. Brenda Edwards at the above telephone number for additional information.

FOR FURTHER INFORMATION CONTACT: Mr. Bryan Berringer, U.S. Department of Energy, Building Technologies Program, Mail Stop EE-2J, Forrestal Building, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: (202) 586-0371. E-mail: Bryan.Berringer@ee.doe.gov.

Ms. Jennifer Tiedeman, U.S. Department of Energy, Office of the General Counsel, Mail Stop GC-71, Forrestal Building, 1000 Independence Avenue, SW., Washington, DC 20585-0103. Telephone: (202) 287-6111. E-mail: <mailto:Jennifer.Tiedeman@hq.doe.gov>.

SUPPLEMENTARY INFORMATION:

I. Background and Authority

Title III, Part C of the Energy Policy and Conservation Act of 1975 (EPCA), Pub. L. 94-163 (42 U.S.C. 6311-17 (“sections 6311-6317”)), established the Energy Conservation Program for certain industrial equipment, which includes commercial refrigeration equipment, the focus of this notice.¹ Part C specifically includes definitions (42 U.S.C. 6311), energy conservation standards (42 U.S.C. 6313), test procedures (42 U.S.C. 6314), labeling provisions (42 U.S.C. 6315), and the authority to require information and reports from manufacturers (42 U.S.C. 6316). With respect to test procedures, Part C authorizes the Secretary of Energy (the Secretary) to

¹ For editorial reasons, upon codification in the U.S. Code, Part C was re-designated Part A-1.

prescribe test procedures that are reasonably designed to produce results that measure energy efficiency, energy use, and estimated annual operating costs, and that are not unduly burdensome to conduct. (42 U.S.C. 6314(a)(2))

6314(a)(6)(C) directs DOE to develop test procedures to establish the appropriate rating temperatures for products for which standards will be established under section 6313(c)(5), including (1) ice-cream freezers; (2) commercial refrigerators, freezers, and refrigerator-freezers with a self-contained condensing unit without doors; and (3) commercial refrigerators, freezers, and refrigerator-freezers with a remote condensing unit. Provisions of section 6314(a)(6) provide DOE with additional authority to establish and amend test procedures for commercial refrigeration equipment. On December 8, 2006, DOE published a final rule adopting test procedures for commercial refrigeration equipment. 71 FR 71340. Title 10 of the Code of Federal Regulations (10 CFR) 431.64 directs manufacturers of commercial refrigerators, freezers and refrigerator-freezers to use certain sections of Air-Conditioning and Refrigeration Institute (ARI) Standard 1200–2006, “Performance Rating of Commercial Refrigerated Display Merchandisers and Storage Cabinets” when measuring the energy consumption of this equipment. On January 9, 2009, DOE established energy conservation standards for certain classes of commercial refrigerators, effective January 1, 2012, and provided that the test procedures at 10 CFR 431.64 apply to that equipment. 74 FR 1092, 96. The basic models included in FSI’s petition are subject to the applicable standards established in that rulemaking and are therefore required to be tested and rated according to the prescribed DOE test procedure as of January 1, 2012.

DOE's regulations for covered products and equipment permit a person to seek a waiver from the test procedure requirements for covered commercial equipment if at least one of the following conditions is met: (1) the petitioner's basic model contains one or more design characteristics that prevent testing according to the prescribed test procedures; or (2) the prescribed test procedures may evaluate the basic model in a manner so unrepresentative of its true energy consumption as to provide materially inaccurate comparative data. 10 CFR 431.401(a)(1). Petitioners must include in their petition any alternate test procedures known to the petitioner to evaluate the basic model in a manner representative of its energy consumption. 10 CFR 431.401(b)(1)(iii). The Assistant Secretary for Energy Efficiency and Renewable Energy (Assistant Secretary) may grant a waiver subject to conditions, including adherence to alternate test procedures. 10 CFR 431.401(f)(4). Waivers remain in effect according to the provisions of 10 CFR 431.401(g).

The waiver process also permits parties submitting a petition for waiver to file an application for interim waiver of the applicable test procedure requirements. 10 CFR 431.401(a)(2). The Assistant Secretary will grant an interim waiver if it is determined that the applicant will experience economic hardship if the application for interim waiver is denied, if it appears likely that the petition for waiver will be granted, and/or the Assistant Secretary determines that it would be desirable for public policy reasons to grant immediate relief pending a determination of the petition for waiver. 10 CFR 430.401(e)(3). An interim waiver remains in effect for 180 days or until DOE issues its determination on the petition for waiver, whichever is

sooner. DOE may extend an interim waiver for an additional 180 days. 10 CFR 430.401(e)(4).

II. Application for Interim Waiver and Petition for Waiver

On January 31, 2013, FSI submitted a petition for waiver from the DOE test procedure applicable to commercial refrigerators, freezers and refrigerator-freezers set forth in 10 CFR 431.64, as well as an application for interim waiver. FSI requested the waiver for certain basic models of its commercial ice cream freezers. This equipment is classified as a commercial ice cream freezer (category (vii)) in the table listing some of the applicable test procedure requirements at 10 CFR 431.64(b)(3)). The applicable test procedure for this equipment is specified in 10 CFR 431.64(b), which incorporates by reference ARI Standard 1200-2006, section 3, “Definitions,” section 4, “Test Requirements,” section 7, “Symbols and Subscripts,” and, section 5, “Rating Requirements for Remote Commercial Refrigerated Display Merchandisers and Storage Cabinets.”

FSI seeks a waiver and interim waiver from the applicable test procedure under 10 CFR 431.64 on the grounds that its commercial ice cream freezers contain design characteristics that prevent testing according to the current DOE test procedure. Specifically, FSI asserts that particular basic models of commercial ice cream freezers are not able to operate at the specified integrated average temperature of -15 °F, which is required for testing and rating purposes. Instead, FSI asserts that the equipment can only operate from 0 °F to -5 °F. Consequently, FSI requested that DOE grant a waiver from the applicable test procedure, allowing the specified products to be tested at an integrated average temperature of 0 °F, which FSI asserts is an

acceptable temperature at which to test the specified basic models. FSI further asserts that these basic models of commercial ice cream freezers are designed to maintain the frozen state of an already frozen product, not to lower the temperature of non-frozen products to the 0 °F to -5 °F operating temperature.

In addition, FSI asserts that the commercial ice cream freezers subject to the petition also have significantly greater volumes per unit of total display area (TDA) than other commercial freezers of a similar type and function. FSI believes the current method of measurement for TDA in the DOE test procedure does not provide a fair and accurate representation of the display area and, therefore, the energy use of its products. FSI is requesting an adjustment or allowance for the measurement of TDA.

The Department articulated its position regarding basic models of commercial refrigeration equipment that are not capable of operating at the required integrated average temperature specified by the DOE test procedure in a test procedure final rule published on February 21, 2012. 77 FR 10292. Specifically, to qualify to use the lowest application product temperature for a certain piece of equipment, a manufacturer should be confident that any case tested under that provision could achieve the specified lowest application product temperature within ± 2 °F and could not be tested at the rating temperature (i.e., integrated average temperature specified by the DOE test procedure) for the given equipment class. Further, in the final rule, DOE clarified that, for many pieces of equipment, the lowest application product temperature that should be used for testing will be the lowest temperature setting on the unit's

thermostat. 77 FR 10292, 10303 (February 21, 2012).

DOE agrees with FSI's assertion that the basic models identified in its petition cannot be operated at the associated rating conditions currently specified for commercial ice cream freezers in the DOE test procedures given the available data. However, when the temperature knob is set to the coldest setting as described in the February 2012 final rule, DOE has confirmed that the corresponding integrated average temperature achieved during operation by these basic models is approximately -8°F. In light of this and DOE's position in the February 2012 final rule, DOE has concluded that FSI's request to test these basic models of commercial ice cream freezers at an integrated average temperature of 0°F is inappropriate. Instead, DOE has determined that the basic models of commercial ice cream freezers listed in FSI's petition should be tested at their lowest application product temperature as defined at 10 CFR 431.62, which corresponds to an integrated average temperature of -8 °F.

DOE rejects FSI's request regarding the use of an alternative calculation and use of the TDA metric to characterize the display area of the commercial ice cream freezer. During the previous rulemaking considering energy conservation standards for commercial refrigeration equipment, TDA was chosen as the display metric because DOE found through its own investigation and research and after receiving public comment on the issue that it is most representative of the heat loads that define the performance of transparent-door equipment – namely radiation and conduction through glass doors. 74 FR 1092 (Jan. 9, 2009). Additionally, since commercial ice cream freezers are used for merchandising in the retail environment, “face

area” (or area of visible product), which is analogous to TDA, is often used by retailers as the metric of equipment capacity. In the ongoing rulemaking it was reconfirmed that TDA should be the metric of choice. Consequently, DOE is not swayed by FSI’s argument and does not believe that the commercial ice cream freezers described in the petition contain design characteristics that make the methods of determination and the TDA metric unrepresentative and is denying this portion of the petition.

Last, FSI has raised two smaller testing issues, which DOE does not believe merit any consideration. First, FSI states that the packets used for testing purposes should be pre-chilled to 0 °F or -5 °F before the test is started, implying that the current test procedure incorporates some type of pull-down period. FSI’s assertion is incorrect; the DOE test procedure does not incorporate a pull-down period during the energy consumption test. Instead, the DOE test procedure allows the commercial ice cream freezer to be loaded with room temperature product simulators and filler packages, and requires that the unit run until it has reached steady-state operation at the specified rating temperature for the required stabilization period as defined in sections 3 and 7.4 of ASHRAE 72-2005. The actual energy consumption test does not begin until the stabilized integrated average temperature is reached and maintained. Consequently, FSI’s request is denied. Second, FSI asserts that the integrated average temperature must stabilize prior to starting the energy consumption test. DOE agrees with FSI on this point, however, stabilization is currently required by the DOE test procedure, as specified by ASHRAE 72-2005, “Method of Testing Commercial Refrigerators and Freezers,” which is incorporated by reference as part of the DOE test procedure. Thus, FSI’s request is redundant and unnecessary.

DOE has determined that one portion FSI's petition likely will be granted, and that it is desirable for public policy reasons to grant FSI relief pending a determination on the petition. DOE believes that it is likely FSI's petition will be granted because the commercial ice cream freezers specified in FSI's petition are not able to operate at the specified integrated average temperature of $-15^{\circ}\text{F} \pm 2^{\circ}\text{F}$. DOE previously granted interim waivers to Hill PHOENIX Inc. and Hussmann based on a similar issue pertaining to the ability to test certain of their products at the specified integrated average temperature in the DOE test procedure. (77 FR 5782, February 6, 2012, and 77 FR 4800, Jan. 31, 2012, respectively) In addition, DOE has determined that it is desirable that the energy efficiency of this equipment be tested and rated in a manner similar to other commercial refrigeration equipment while DOE considers the petition for waiver. As a result, DOE grants an interim waiver to FSI for the specified models of its commercial refrigerator products. Therefore, *it is ordered that*:

The application for interim waiver filed by FSI is hereby granted for the basic models of commercial ice cream freezer specified in FSI's application, subject to the provisions specified in section III below. FSI shall be required to test and rate the specified basic models according to the alternate test procedure as set forth in section III, "Alternate test procedure."

The interim waiver applies to the following basic models:

SCF694, SCF695S, SCF1094, SCF1095S, SCF1494, SCF1495S, SCF1694, SCF1695S, SCF1894, SCF1895S, SCF630, SCF940, SCF1310, and SF1710

DOE makes decisions on waivers and interim waivers for only those models specifically set out in the petition, not future models that may be manufactured by the petitioner. FSI may

submit a petition for waiver and application for interim waiver, as appropriate, for additional models of commercial refrigerators, freezers and refrigerator-freezers for which it seeks a waiver from the DOE test procedure. In addition, DOE notes that grant of an interim waiver or waiver does not release a petitioner from the certification requirements set forth at 10 CFR Part 429.

III. Alternate Test Procedure

As a condition for granting this interim waiver to FSI, DOE requires FSI to test the commercial ice cream freezers specified in its January 31, 2013 petition and listed above according to the test procedure specified at 10 CFR 431.64, except that instead of testing at the required integrated average temperature of $-15 \pm 2^{\circ}\text{F}$, FSI shall test the specified basic models at an integrated average temperature of $-8 \pm 2^{\circ}\text{F}$, which DOE confirmed is the lowest temperature at which those models can operate.

DOE notes that it has published an amended test procedure for commercial refrigeration equipment. (77 FR 10292, Feb. 21, 2012). The amended test procedure addresses the testing issue addressed in this waiver, requiring products to be tested at their lowest application product temperature. *Id.* Use of the amended test procedure will be required on the compliance date of any amended standards for this equipment.

IV. Summary and Request for Comments

Through today's notice, DOE announces receipt of FSI's petition for waiver from the test procedures that apply to commercial refrigerators, freezers and refrigerator-freezers. For the reasons articulated above, DOE also grants FSI an interim waiver from those procedures as described above. DOE is publishing FSI's petition for waiver in its entirety pursuant to 10 CFR 431.401(b)(1)(iv). Confidential business information has been redacted from the petition. Furthermore, today's notice includes an alternate test procedure that FSI is required to follow as a condition of its interim waiver.

DOE solicits comments from interested parties on all aspects of the petition. Pursuant to 10 CFR 431.401(d), any person submitting written comments must also send a copy of such comments to the petitioner. The contact information for the petitioner is: Paul Storch, President, Summit Appliance Div., Felix Storch, Inc., 770 Garrison Ave., Bronx, NY 10474. All submissions received must include the agency name and case number for this proceeding. Submit electronic comments in WordPerfect, Microsoft Word, Portable Document Format (PDF), or text (American Standard Code for Information Interchange (ASCII)) file format and avoid the use of special characters or any form of encryption. Wherever possible, include the electronic signature of the author. DOE does not accept telefacsimiles (faxes).

According to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit two copies: one copy of the document including all the information believed to be confidential, and one copy of the document with the information believed to be confidential deleted. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

Issued in Washington, DC, on April 29, 2013.

Kathleen B. Hogan
Deputy Assistant Secretary for Energy Efficiency
Energy Efficiency and Renewable Energy

January 31, 2013

Dr. David Danielson
Assistant Secretary
Energy Efficiency and Renewable Energy
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

RE: *Application for Interim Waiver pursuant to 10 C.F.R. § 431.401 for basic Summit models:* SCF694, SCF695S, SCF1094, SCF1095S, SCF1494, SCF1495S, SCF1694, SCF1695S, SCF1894, SCF1895S, SCF630, SCF940, SCF1310, and SF1710

This application for interim waiver applies to the following models: SCF694, SCF695S, SCF1094, SCF1095S, SCF1494, SCF1495S, SCF1694, SCF1695S, SCF1894, SCF1895S, SCF630, SCF940, SCF1310, and SF1710. Jointly, these models are referred to throughout as “Freezers.” Further information to support this application is contained in the Petition for Waiver filed simultaneously to this application.

FSI though this Application for Interim Waiver will demonstrate likely success of the Petition for Waiver and address what economic hardship and/or competitive disadvantage is likely to result absent a favorable determination on the Application for Interim Waiver.

CONFIDENTIAL BUSSINESS INFORMATION

Likelihood Success on the Merits

This action was initiated at the suggestion of DOE after discussing the design and operation of certain FSI commercial freezers. During those conversations, FSI and DOE discussed specific changes to the test procedures that would provide a more representative indicator of energy consumption for comparative purposes. It was agreed that FSI would submit this waiver request with an understanding that the waiver would be granted.

Economic Hardship

[REDACTED]

[REDACTED]

[REDACTED]

Ice-cream freezers are part of a suite of products that FSI offers its commercial customers; others include ice-makers, beverage refrigerators, compact commercial refrigerators, wine cellars, beer dispensers, juice mixers, etc.

[REDACTED]

[REDACTED]

Conclusion

FSI initiated this Application for Interim Waiver at the suggestion of DOE after the department learned of the unique design and operation of FSI's freezers, and it is FSI's understanding that DOE will grant it a waiver. [REDACTED]

[REDACTED] For these reasons, FSI respectfully requests that you grant an interim waiver of the test procedures of 10 C.F.R. § 431.64.

Respectfully submitted,

Paul Storch
Summit Appliance Div. Felix Storch, Inc.
770 Garrison Ave. Bronx, NY 10474 USA
PH. 718-893-3900
FAX: 718-842-3093

Building Technologies Program
U.S. Department of Energy
Test Procedure Waiver
1000 Independence Ave., SW
Mailstop EE-2J
Washington, DC 20585-0121

INTRODUCTION

Felix Storch, Inc. (FSI) is a small business engaged in importing, manufacturing, and distributing appliances to niche markets in household, commercial, and medical refrigeration, as well as household cooking and laundry. Located in the South Bronx, New York, [REDACTED]

This Petition for Waiver regards FSI's commercial ice-cream freezers that are designed to operate at significantly warmer temperatures than specified in the testing requirements for ice-cream freezers (-15 °F), as adopted by the Department of Energy (DOE) at 10 C.F.R. § 431.64. FSI Freezers also have significantly greater volumes per unit of total display area (TDA) than other commercial freezers. This factor, which can increase significantly the space/volume refrigerated, must be considered in any representative test procedures for energy standards. As such, the current regulatory test procedures do not provide a fair and accurate representation of the energy use of the products listed below. For this reason, FSI respectfully requests a waiver of the test procedures provided for commercial refrigeration in 10 C.F.R. § 431 (2012).

In the interim, until due process on the petition is carried out, FSI is filing an Application for Interim Waiver to avoid economic hardship that it might experience absent a favorable determination on its Application for Interim Waiver.

I. Models for which a waiver is requested.

This waiver request applies to the following models: SCF694, SCF695S, SCF1094, SCF1095S, SCF1494, SCF1495S, SCF1694, SCF1695S, SCF1894, SCF1895S, SCF630, SCF940, SCF1310, and SF1710. Jointly, these models are referred to throughout as "Freezers." These Freezers are designed to operate at significantly higher temperatures than the temperature specified in applicable testing temperatures for ice-cream freezers (-15 °F) as adopted by the Department of Energy (DOE) at 10 C.F.R. § 431.64. The Freezers also have significantly greater volumes per unit than other commercial freezers; this is not accounted for adequately by the total display area (TDA) approach. Because of these factors, the current regulatory test procedures do not provide a fair and accurate representation of the energy use of these models.

II. Manufacturers of other basic models marketed in the United States known by FSI to incorporate similar design characteristics.

The manufacturers of other basic models marketed in the United States and known to the FSI to incorporate similar design characteristic(s) are included in Attachment B.

III. The proscribed test procedures evaluate FSI's models in a manner so unrepresentative of their true energy consumption characteristics as to provide materially inaccurate comparative data.

The proscribed test procedures at 10 C.F.R. § 431.64 provide for an evaluation of the Freezers in a manner so unrepresentative of their true energy consumption characteristics as to provide materially inaccurate comparative data. FSI's Freezers are not designed, constructed, or capable of maintaining the -15 °F testing temperature required by DOE

test procedures. The TDA-based formula in the test procedures fails to account for the increased volume of certain freezers with variation in the depth of certain freezers.

A. FSI's Freezers are not designed to operate at -15 °F, and measuring the models' energy consumption while at this temperature would provide data unrepresentative of their true energy consumption.

The uniform test methods for measuring the energy consumption of commercial ice-cream freezers² require the measurement of daily energy consumption while operating at - 15 °F. 10 C.F.R. §431.64(b)(2)(vii). FSI's Freezers are not designed, constructed, or capable of maintaining a - 15 °F temperature. FSI's Freezers, as confirmed by the manufacturers, are designed to operate at 0 °F (-18 °C).³

Testing FSI's Freezers at – 15 ° F strains the compressor, forcing it to operate continuously in an uncharacteristic manner, leading to inaccurate energy consumption data of a Freezer intended to operate at 0 °F (-18 °C). Consequently, the current test procedures provide unrepresentative data by which to assess FSI's Freezers in a fair and comparative manner.

The Freezers are designed to maintain the frozen state of an already frozen product, not to lower the temperature of non-frozen products to the 0 °F to -5 °F operating temperature.

B. The TDA-based formula that DOE established to test commercial ice-cream freezers fails to account for a variance in freezer volume associated with depth.

The formula that DOE employs to determine the energy conservation standard for ice-cream freezers is based on the total display area (TDA) of the unit. 10 C.F.R. §§ 431.66(a)(3), (d)(1). This approach relies solely on the cross sectional area of the unit and fails to account for increased depth/volume of certain freezers, such as FSI's Freezers.⁴ This additional capacity necessitates additional energy consumption to cool

² Technically, FSI's Freezers do not conform to DOE's definition of "ice-cream freezer." The regulations define "ice-cream freezer" as a "commercial freezer that is designed to operate at or below –5 °F (–21 °C) and that the manufacturer designs, markets, or intends for the storing, displaying, or dispensing of ice cream." 10 C.F.R. § 431.62. As mentioned above, FSI's Freezers are designed to operate at 0 °F (-18 °C). They do not meet the precise definition of ice-cream freezers and instead more closely resemble the standard for low temperature (freezers) that specifies a 0 °F temperature for testing. *See* Energy Conservation Program for Commercial and Industrial Equipment: Energy Conservation Standards for Commercial Ice-Cream Freezers; Self-Contained Commercial Refrigerators, Commercial Freezers, and Commercial Refrigerator-Freezers Without Doors; and Remote Condensing Commercial Refrigerators, Commercial Freezers, and Commercial Refrigerator Freezers, 74 Fed. Reg. 1,092, 1,104, Table IV-4 (Jan. 9, 2009) (to be codified at 10 C.F.R. pt. 431).

³ *See* Attachment A, certifications from the manufacturers that the Freezers are designed to operate at 0 °F (-18 °C).

⁴ *See* Attachment C, a schematic of FSI step bottom freezers with calculations.

the larger space. DOE's current approach, which is dependent on the TDA, penalizes freezers with greater depths by requiring them to meet the same efficiency requirements of lower volume models. The standards currently apply the same formula to freezers with different volumes. This results in such unrepresentative data of the Freezer's true energy consumption characteristics as to provide materially inaccurate comparative data.

Consequently, FSI requests that DOE grant a waiver from the test procedures for the measurement of energy consumption of commercial refrigerators, freezers, and refrigerator-freezers at 10 C.F.R. § 431, in accordance with the proposed test procedures outlined in section IV, below.

IV. Alternative procedures known to FSI to evaluate the characteristics of the Freezers in a manner representative of their energy consumption.

FSI has done extensive research and consultations with the manufacturer, including review of the ASHRAE and AHI standards. Based on information provided by the manufacturer, FSI recommends the following procedures to test the Freezers in a representative manner and in accordance with their design parameters:

1. The test should be conducted at an average temperature of 0 °F (-18 °C) pursuant to manufacturer design specifications.
2. The requirement that the volume of the freezer be filled 80% with product should be modified to specify that all fill products must be pre-frozen to 0 °F or colder.
3. To compensate for the depth and bottom contours of the freezer, the energy consumption measured should include an adjustment factor to account for added depth/volume not reflected in the TDA. For example, SCF1094 could be multiplied by 72% to account for increased volume over flat bottom freezers and correspondent smaller volumes despite the same TDA.
4. The freezer temperature should be stabilized to observe compressor cycling before the test is initiated.
5. Assure proper calculation of TDA by the laboratory conducting the test procedures.⁵

A. The test should be conducted at an average temperature of 0 °F (-18 °C) pursuant to manufacturer design specifications.

⁵ See, e.g., Attachment D, a submittal on the TDA calculation from the manufacturer for model SCF1094.

DOE's use of -15 °F as a temperature test is not appropriate because the definition of "ice-cream freezer" is overly narrow. In its 2009 rulemaking adopting the energy conservation standards for commercial ice-cream freezers, DOE acknowledged that there are similar freezers for many different applications, including specific cabinets for the hardening of ice cream, which do need to operate at these colder temperatures.⁶ DOE also acknowledged the differences between freezers intended to pull frozen products down to temperature and storage freezers, but chose -15 °F as the temperature for all testing. However, freestanding cabinets from most of the manufacturers of free-standing commercial freezers operate at temperatures warmer than -15 °F. Designing for -15 °F would result in freezers with thicker walls and larger compressors. These design changes would result in retailers purchasing freezers of a greater size (for a fixed amount of product), resulting in higher industry costs and overall greater use of energy.

Additionally, ARI Standard 1200, 2006, which DOE frequently references in its rulemaking process, further supports the use of a test temperature of 0 °F. In its definition of ice-cream applications in Section 3.14.1, ARI specifies that the product temperature for ice-cream applications is $0.0\text{ °F} \pm 2\text{ °F}$.⁷

B. Assure all fill material is pre-frozen to 0 °F to - 5 °F.

The Freezers are designed for the storage of already frozen ice-cream at serving temperatures, primarily between 0 °F and -5 °F. None of these Freezers are designed to freeze products that are not already frozen. The use and care manual for the [REDACTED] freezers states that "[t]he appliance is not suitable for freezing products, but meant as a storage unit for pre-frozen products." As such, the requirement that the volume of the freezer be filled 80% with product should be modified to specify that all fill products must be pre-frozen to 0 °F or colder.

C. The formula, which relies solely on TDA, should be adjusted to account for variations in freezer depths/volumes.

The TDA-centric formula should be adjusted to account for varying freezer volumes. The formula used for setting maximum temperature usage for product class HCT-SC.I of $0.56 \times \text{TDA} + 0.43$ results in the same permissive usage of energy for any freezer with the same cross sectional display area, whether the freezers were shallow inside (as are some with flat bottoms) or extra deep (as are all of those in this waiver petition).

⁶ 74 Fed. Reg. at 1,103.

⁷ Air-Conditioning and Refrigeration Institute, STANDARD FOR PERFORMANCE OF COMMERCIAL REFRIGERATED DISPLAY MERCHANDISERS AND STORAGE CABINETS: STANDARD 1200 3 (2006) ("Commercial Refrigerated Display Merchandisers and Storage Cabinets intended for Ice Cream Application shall have an Integrated Average Temperature of all test package averages of $0.0\text{ °F} \pm 2\text{ °F}$.").

All self-contained horizontal storage freezers contain a compressor, which is generally mounted on one side of the freezer near the bottom. Some manufacturers place the inner “floor” of the freezer at a level flat across the top of the compressor housing. This is simpler and cheaper to manufacture because it requires only a rectangular inner cabinet. This construction has the same total display area as more expensive freezers that provide for a compressor step. Flat bottom freezers have a smaller volume, allowing for manufacture with smaller components, and thereby resulting in a lower price. All the FSI Freezers have a more expensive construction, which extends the interior to the floor (except for the compressor section).

Because energy usage is a function of overall volume, rather than top cross sectional area, it is reasonable to incorporate an adjustment factor to properly account for deeper, more voluminous freezers. While FSI, as a small business, is not in a position to survey the entire industry, FSI can document, for example, that 28% of the volume of the SCF1094 Freezer is below the compressor height step.⁸ It would be justified to apply an adjustment factor to account for the 28% higher energy usage for that model as compared to a flat bottom freezer with the same TDAs. Under current regulation both freezers are subjected to the same allowed maximum energy usage because the TDAs are the same.

D. Before initiating the test, stabilize the temperature and assure proper TDA application.

The freezer temperature should be stabilized to observe compressor cycling before the test is initiated. All FSI Freezers are manually defrosted, and have no defrost cycle. Upon initial start-up, the Freezers will run continuously until the inner liner, components, air, and contents are at the design temperature. The freezer will then cycle on and off to maintain the set point temperature (default is 0 °F). Also, the test procedures should assure proper calculation of TDA by the laboratory conducting the test procedures.⁹

CONCLUSIONS

FSI respectfully requests DOE to waive the test procedures for commercial ice-cream freezers in lieu of a representative test as described above to provide a representative comparison of energy consumption. FSI’s Freezers are not designed, constructed, or capable of maintaining the -15 °F testing temperature required by DOE in the energy test procedures for the measurement of energy consumption of commercial ice-cream freezers at 10 C.F.R. § 431.64. FSI’s Freezers are also designed to operate at a temperature higher than the temperature used by DOE to define commercial ice-cream freezers. Additionally, the current test procedures do not account for the wide variance in freezer volume. It is materially inaccurate to compare the energy consumption of FSI’s Freezers to other shallower models with the same TDA because FSI’s models must refrigerate

⁸ The interior schematic and basis for the calculation is shown in Attachment C.

⁹ See, e.g., Attachment D, the TDA calculation from the manufacturer for model SCF1094.

28% more space. A more accurate test procedure would measure energy consumption in terms of the amount of energy used to refrigerate each cubic foot of interior space. For these reasons, FSI respectfully requests that DOE waive the test procedures at 10 C.F.R. § 431.64 for FSI's Freezers.

Respectfully submitted,

Paul Storch, President
Summit Appliance Div. Felix Storch, Inc.
770 Garrison Ave. Bronx, NY 10474 USA
PH. 718-893-3900
FAX: 718-842-3093

ATTACHMENT A

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Mr. David Case
U.S. D.O.E.
Washington, DC

The following [REDACTED] models, built by us in [REDACTED] for Felix Storch, Inc all are designed to operate within the range of 0 degrees F to -5 degrees F and are designed only to display per-chilled contents:

SCF694 / SCF695S
SCF1094 / SCF1095S
SCF1494 / SCF1495S
SCF1694 / SCF1695S
SCF1894 / 1895S

Best regards
[REDACTED]

[REDACTED]
[REDACTED]

Mr. David Case
U.S. D.O.E.
Washington, DC

Date
31/01/13

SCF glass lid freezers

The following models, built by [REDACTED] for Felix Storch, Inc all are designed to operate within the range of +5 degrees F to -5 degrees F and are designed only to display per-chilled contents:

SCF630
SCF940
SCF1310
SCF1710

Yours faithfully
[REDACTED]

ATTACHMENT B

Manufacturers of Domestically Marketed Units of the Same Product Type

Turbo Air
1250 Victoria Street
Carson CA 90746

Model TGF-9

Delfield (division of Manitowoc)
980 S. Isabella Road
Mt. Pleasant, MI 48858

Model N227

Atlas Metal Products
1135 N.W. 159th Drive
Miami, FL 33169

Models WDG-2 and WDF-3

Kysor-Warren Division
Heatcraft Worldwide Refrigeration
5201 Transport Boulevard
Columbus, GA 31907

Model LD1DC

Electrolux Home Products
PO Box 212378
Augusta, GA 30917

Frigidaire FCCG Series glass lid commercial freezers

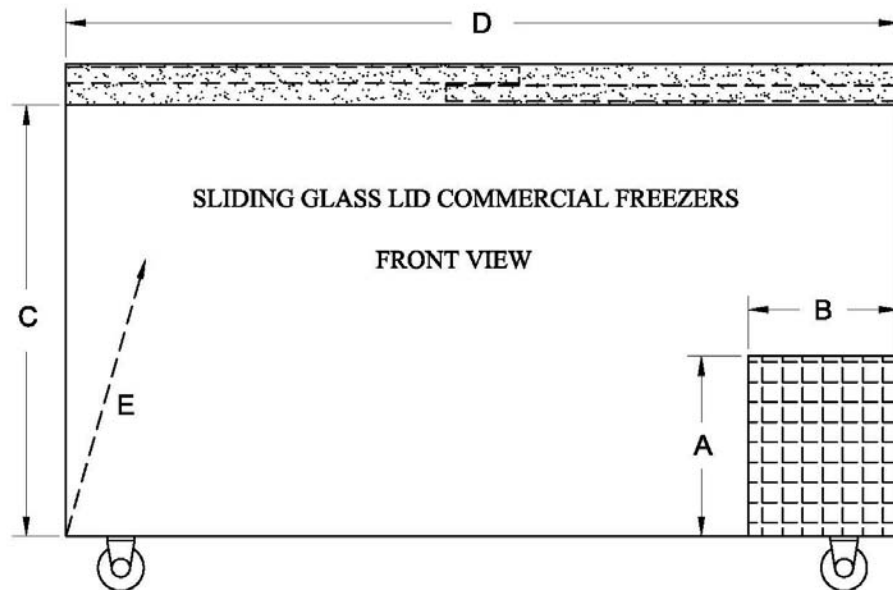
True Manufacturing
2001 East Terra Lane
O'Fallon, MO 63366

TFM series

Masterbilt
908 Highway 15 N.
New Albany, MS 38652

TDM8

ATTACHMENT C



A: HEIGHT OF COMPRESSOR STEP:	9 7/8 INCHES
B: WIDTH OF COMPRESSOR STEP:	8 1/4 INCHES
C: HEIGHT TO LOAD LINE:	23 5/8 INCHES
D: INTERIOR WIDTH	
SCF630	24 1/2 INCHES
SCF940	32 1/4 INCHES
SCF1310	45 5/8 INCHES
SCF1710	57 1/2 INCHES
E: INTERIOR DEPTH OF ALL UNITS	19 7/8 INCHES
EXTERIOR HEIGHT OF ALL MODELS	35 1/4 INCHES

MODEL NO.
SCF630 TO SCF1710

TYPE: SLIDING GLASS
TOP FREEZER



FELIX STORCH INC
www.summitappliance.com
(718) 893-3900

DATE: JUNE/18/08

ATTACHMENT D

SCF1094 CALCULATION OF AREA BELOW COMPRESSOR STEP (REFER TO DIAGRAM)

OVERALL AREA

$$F \times H \times G + (E - F) \times J \times G$$

$$28.98 \times 29.53 \times 21.1 + 7.87 \times 19.69 \times 21.1$$

$$18,057 \text{ cubic inches} + 3,270 \text{ cubic inches} = 21,327/1728 = 12.3 \text{ cu ft}$$

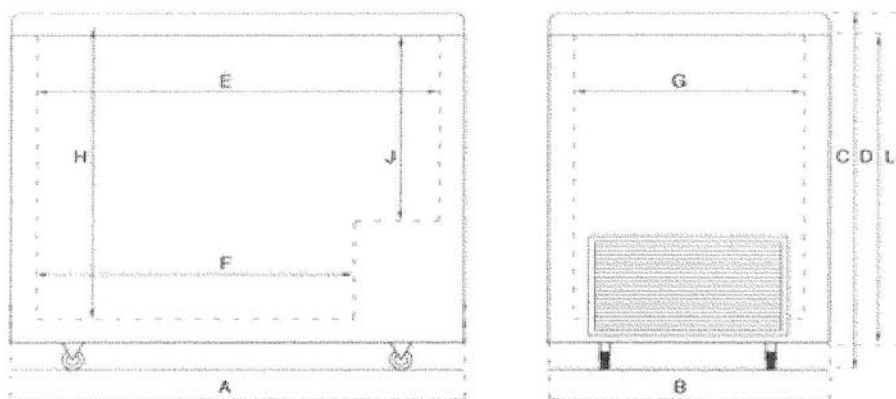
AREA UNDER STEP

$$F \times (H - J) \times G$$

$$28.98 \times 9.84 \times 21.1 = 6017 \text{ cubic inches} = 3.482 \text{ cu ft}$$

$$3.482/12.3 = 28.3 \%$$

Summit Flat Glass Lid Freezer Series					
Model	SCF694	SCF1094	SCF1494	SCF1694	SCF1894
Capacity (cu ft.)	7.40	10.70	13.80	15.50	20.00
A (inch.)	28.50	41.50	51.34	59.21	67.09
B (inch.)	25.75	25.75	25.75	25.75	25.75
C (inch.)	36.06	36.06	36.06	36.06	36.06
D (inch.)	30.71	30.71	30.71	30.71	30.71
E (inch.)	23.86	36.85	46.69	54.57	62.44
F (inch.)	15.98	28.98	38.82	46.69	54.57
G (inch.)	21.10	21.10	21.10	21.10	21.10
H (inch.)	29.53	29.53	29.53	29.53	29.53
J (inch.)	19.69	19.69	19.69	19.69	19.69
L (inch.)	33.31	33.31	33.31	33.31	33.31
Castors	Yes	Yes	Yes	Yes	Yes
Lock	Yes	Yes	Yes	Yes	Yes
Baskets	1	1	2	2	2



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